

## FURTHER EXPLANATIONS DESIRED.

In a recent communication on "The stars and the weather" to Leslie's Weekly, Prof. Simon Newcomb, the eminent astronomer, says:

The fact is that the extraordinary changes of weather which we experience are produced almost entirely by the accidental meeting of currents of hot, cold, or moist air. High above the earth the air is in constant motion—currents or streams moving with great swiftness around the earth, in some latitudes or seasons in a westerly and in others in an easterly direction. Through the heat of the sun, water is constantly evaporated from the ocean and to a less extent from the land. The vapor rising up mixes in with the air currents and condenses into clouds which are carried along with the winds. The currents vary from time to time, and when a cold and a wet current come together we have rain. The sun shining on the earth heats it up, and the warm earth heats the air in contact with it and thus expands it; the expanded hot air tends to rise and as it does so, the air from around flows down and in and takes its place. By this change electricity is developed and thus we may have a thunderstorm. If the winds are blowing in opposite directions near the place where the volume of air rises, we may have a whirlwind or a cyclone.

Thus it is that the weather is continually changing over the greater part of the earth through the varying currents of air, without the direct action of any astronomical cause. It is true that the whole movement is kept up by the heat of the sun; but there are, so far as we know, no changes in this heat to produce changes of weather.

We think that the above quotation gives altogether too much prominence to the accidental meeting and mixture of currents of cold air and moist air. The fact that such mixtures will not produce any appreciable rain was long since demonstrated and this ancient theory was banished from reputable works on meteorology. The development of electricity by the rise of hot air and the descent of cold air is, we believe, a new thought in the physics of the atmosphere. The formation of a cyclone or a whirlwind as a consequence of winds blowing in opposite directions is another theory long since abandoned: only the smaller dust whirls are formed in this way and often not even those. "Accidental" phenomena are entirely unknown in meteorology. Everything moves according to

natural laws; if events seem to be accidental it is only because of our ignorance of the workings of those laws.

In the course of a long acquaintance with this eminent astronomer we have never known him to fall into serious error in a matter of fundamental scientific principles, and as his beautiful popular style of writing contributes powerfully to the dissemination of sound knowledge, we venture to hope that he will publish some further explanation of his views for the benefit of the observers of the Weather Bureau and the readers of the MONTHLY WEATHER REVIEW.

## WEATHER BUREAU MEN AS INSTRUCTORS.

Mr. J. S. Hazen, Observer Weather Bureau, Springfield, Mo., reports that he delivered two lectures during the month. One was before teachers attending the county institute, at Springfield, and the other before teachers attending the summer sessions of the Springfield Normal School.

Both lectures were devoted mainly to a discussion of the use of weather maps in schools.

## CORRIGENDA.

MONTHLY WEATHER REVIEW for May, 1901, page 214, column 2, list of micrographs, etc., supply the following dates:

17. 1901, February 5.

18. 1898, January 5.

24. 1893, February 16.

25. 1892, January 5.

26. 1899, December 14.

MONTHLY WEATHER REVIEW for July, 1901, make the following corrections:

In note at bottom of page 306, column 1, lines 1 and 6, for "Pockles" read "Pockels."

Page 309, column 1, line 5 from bottom, for "east" read "west."

## THE WEATHER OF THE MONTH.

By ALFRED J. HENRY, Professor of Meteorology.

## CHARACTERISTICS OF THE WEATHER FOR AUGUST

The month of August was characterized by (1) an unusually rapid movement of the highs and lows during the early part of the month, (2) a severe and destructive storm on the Gulf coast, and (3) an unusually heavy rainfall along the eastern slopes of the Appalachians. In other respects, the month was fairly typical of average August weather.

Temperature was generally above the average in all parts of the country, save over some portions of the South Atlantic States and along the immediate Pacific coast. The hot weather of the preceding month continued into August, and maximum temperatures ranging from 100° to 110° were recorded at various points in the Missouri and middle Mississippi valleys.

The rapid movement of the highs and lows across the country, which continued until about the 15th of the month, was very remarkable for the summer season. The winds were not especially boisterous and the rainfall accompanying the lows was not heavy.

## PRESSURE.

The distribution of monthly mean pressure is graphically shown on Chart IV and the numerical values are given in Tables I and VI.

The distribution of monthly mean pressure differed from that of a normal month, mainly in the relative position of the south Atlantic high, the crest of the high appearing somewhat farther to the northward than usual. There was also a western extension covering the Lake region. In Tennessee and the central Gulf States, a portion of the territory usually occupied by the south Atlantic high, pressure was relatively low.

As compared with the previous month, pressure rose from .05 to .15 inch over the northern two-thirds of the country, except on the immediate Pacific coast. The maximum rise was in that part of the country where mean pressure was unusually low during July. Pressure was below the normal in the lower Ohio and lower Mississippi valleys, over Texas and a portion of the middle Pacific coast; elsewhere it was above normal by amounts ranging from .01 to .10 inch.

## TEMPERATURE OF THE AIR.

The distribution of monthly mean surface temperature, as deduced from the records of about 1,000 stations, is shown on Chart VI.